

LINCA PINITA, A NEW PHOXOCEPHALID GENUS
AND SPECIES (CRUSTACEA: AMPHIPODA) FROM
THE ARGENTINE CONTINENTAL SHELF

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Abstract.—*Linca pinita*, a new genus and species belonging to the family Phoxocephalidae, is described from the benthos of the Argentine continental shelf, southwest Atlantic, based on a unique specimen, a female, collected during benthos dredging carried out by the R/V *Shinkai Maru*. It is closely related to species in the Birubiinae and Brolginae groups with which it shares many characters. Although the new taxon is convergent with the Brolginae, it is best placed in the Birubiinae.

The unique specimen studied herein was collected by the R/V *Shinkai Maru*, through sampling of benthic communities on the Argentine continental shelf, during four cruises (IV, V, X and XI) carried out in 1978 and 1979. The material was obtained by means of a Picard dredge, the surface sediment was represented primarily by sand and the grain size was less than 2 mm.

The description of the new genus and species follows the style of Barnard & Drummond (1978) who used a standardized form established for identification of phoxocephalids. The entire amphipod was measured drawing a lateral parabolic line from the tip of the rostrum to the posterior extreme of the urosome.

Linca, new genus

Diagnosis.—Female only, male unknown. Eyes not apparent in preserved specimens. Antennae 1–2, flagella not reduced. Antenna 1, article 2 elongate, ventral setae proximal and midventral. Antenna 2, article 1 simple, without any process; spines on article 4 in 3 rows. Molar reduced to a small protrusion, pillow-shape, bearing 2 short and 1 elongate spines, and pubescent, palpar hump small. Maxilla 1, palp biarticulate; inner plate with 4 setae. Maxilliped,

apex of palp article 3 not protuberant, dactyl elongate, apical segment distinct, medium.

Gnathopods subchelate, small, but dissimilar, gnathopod 2 slightly larger than gnathopod 1. Gnathopod 1, article 5 longer than in gnathopod 2, with posterior margin free, not hidden by articles 4 or 6; hand of gnathopods 1–2 respectively ovate and slightly broadened, poorly setose anteriorly. Pereopod 5, article 2 of broad form, not tapering distally.

Uropod 1, peduncle without ventral spike-like spine, without enlarged displaced spine; inner ramus with 1 row of marginal spines. Uropods 1–2, rami lacking spination along their dorsal margin. Uropod 3, article 2 of outer ramus carrying 2 elongate setae. Telson without special dorsal and lateral spines or setae. Epimerae 1–2 lacking long posterior setae. Urosomite 3 without dorsal hook or special process.

Description.—Rostrum fully developed, not constricted. Prebucal parts ordinary; right mandibular incisor with 4 teeth; right lacinia mobilis divided into two parts; mandibular palp, article 1 short, palp medium, apex of article 3 oblique, article 2 without outer setae. Maxilla 1, outer plate with 11 spines, one spine specially thickened. Maxilla 2, outer and inner plates moderately spi-

nose. Maxilliped, inner plate with 1 main spine, of reduced setosity.

Gills present on coxae 2–7. Coxae 2–4 without special anterodorsal humps. Pereopods 3–4, article 5 bearing setae proximally on posterior edge; article 6 with all posterior spines thick and stiff, midapical spine or seta absent. Pereopods 5–6, article 2 setae absent posteriorly; articles 4–5 narrow. Pereopod 7 of normal size, article 2 naked ventrally, without facial setae; article 3 not especially enlarged; dactyl normal.

Epimeron 2 with 2 medial setae above ventral ridge. Epimeron 3 bearing 4 long setae. Urosomite 1 without large lateral facial spines, bearing 2 ventral and midventral crescents or bundles of setae.

Uropod 1, peduncle normally elongate, with dorsolateral spine situated apically, medial spines widely spread. Uropod 2, peduncle with only 1 medial spine distally. Uropods 1–2, peduncles with faint comb on their distal corners. Uropod 3, peduncle lacking extra subapical setae or spines. Telson, each lobe with 2 apical spines plus small plumose seta.

Type species. — *Linca pinita*, new species.

Etymology. — The generic name is derived from the nickname of Lin-Calel meaning “white meat” in the Indian language for a region of Argentina. The specific name refers to the familiar diminutive of the surname of my husband.

Relationships. — The new genus has many similarities with the Birubiinae and Brolginae generic groups. It seems difficult to separate from the Birubiinae, but it has three spines on the molar with one of them very enlarged, and the apices of the peduncles of uropods 1–2 bear combs very faint. This genus differs from the Brolginae group in the elongate article 2 of antenna 1 and the normal as opposed to reduced size of article 5 of antenna 2.

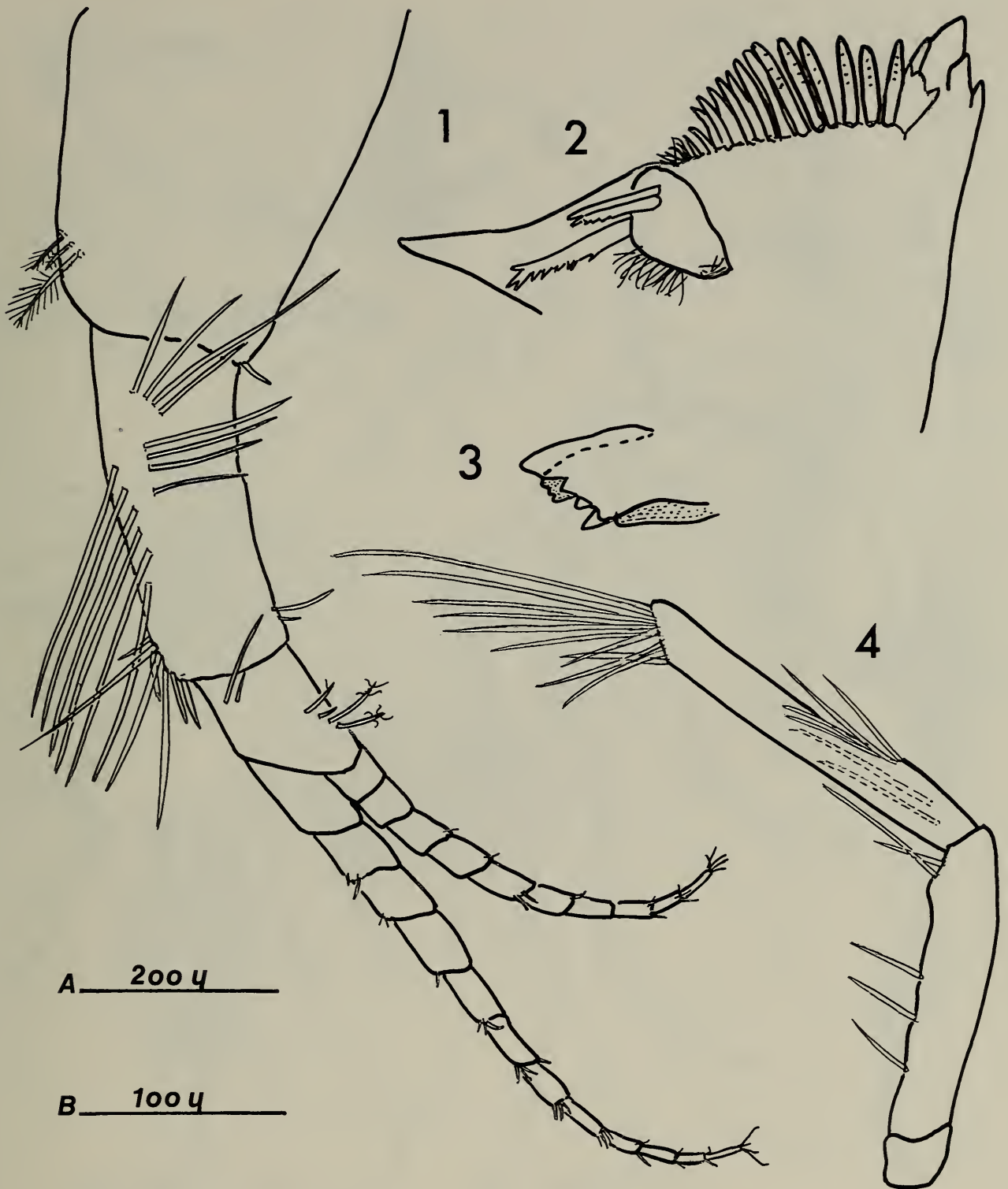
Linca differs from *Birubius* Barnard & Drummond, 1978, in those characters mentioned above for the birubiins, namely: number of spines on the molar and combed corners of peduncles of uropods 1–2. They

can be separated also by the single thick apical spine on the inner plate of maxilliped, by the ventral setae on peduncle of uropod 1, and by the setation of urosomite 1 which in *Birubius* is generally naked or with sparse apicoventral setae or spines near base of uropod 1.

The new genus resembles the brolgin genus *Fuegiphoxus* Barnard, 1980, in the enlarged spine of the molar, in possessing a main spine only on the inner plate of the maxillipeds, in the presence of a midapical spine or seta on article 6 of pereopods 3–4, and in the combed peduncular apices of uropods 1–2. They differ in the elongate article 2 of antenna 1, in the midventrally disposed main setae on article 4 of antenna 1 (which in *Fuegiphoxus* is confined apically), in the presence of pubescence on the molars, and in that article 5 of gnathopod 2 is not shortened in the female as in *Fuegiphoxus*.

Linca also resembles the brolgin genus *Eyakia* Barnard, 1979, in the enlarged spine of the molars, the elongate article 2 of antenna 1, and the presence of pubescence on the molars, but it differs from that genus in having additional proximal spines on article 4 of antenna 2, one main spine (not two) on the inner plate of the maxillipeds, an untapered article 2 of pereopod 5, the peduncular apices of uropods 1–2 combed (they usually are in the Brolginae, but not in *Eyakia*), and the absence of a midapical spine or seta on article 6 of pereopods 3–4.

The characters that separate the subfamilies Birubiinae and Brolginae are not completely defined. The mandibular molars have little significance compared to the strong weighting of the length and setation of article 2 of antenna 1 in all the Phoxocephalidae subfamilies. The main character bringing *Linca* close to the Brolginae is the presence of three molar spines, but it is best placed with the Birubiinae because of the elongate article 2 of antenna 1, and the combination of spination placement on article 2 of antenna 1, the size of article 5 of antenna 2, and the setation on the inner plate of maxilla 1.

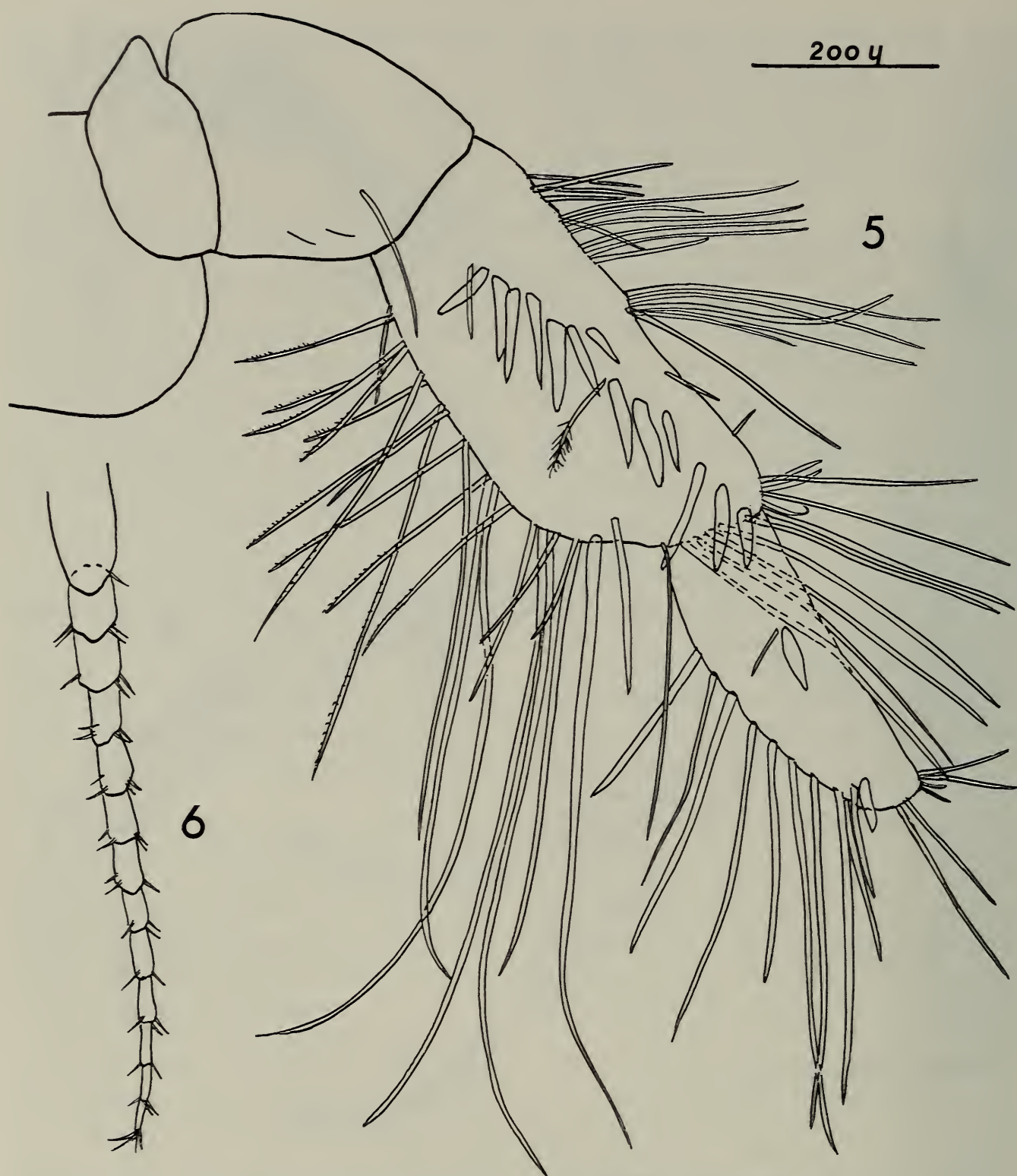


Figs. 1-4. *Linca pinita*, new genus, new species: 1, antenna 1; 2, right mandible; 3, left lacinia mobilis; 4, mandibular palp. Scales: A, Figs. 1, 4; B, Figs. 2, 3.

Linca pinita, new species
Figs. 1-32

Description. — Head about 16% of the total body length, greatest width about 43% of length; rostrum unstricted, broad, elongate, exceeding middle of article 2 of antenna 1. Eyes not apparent in preserved

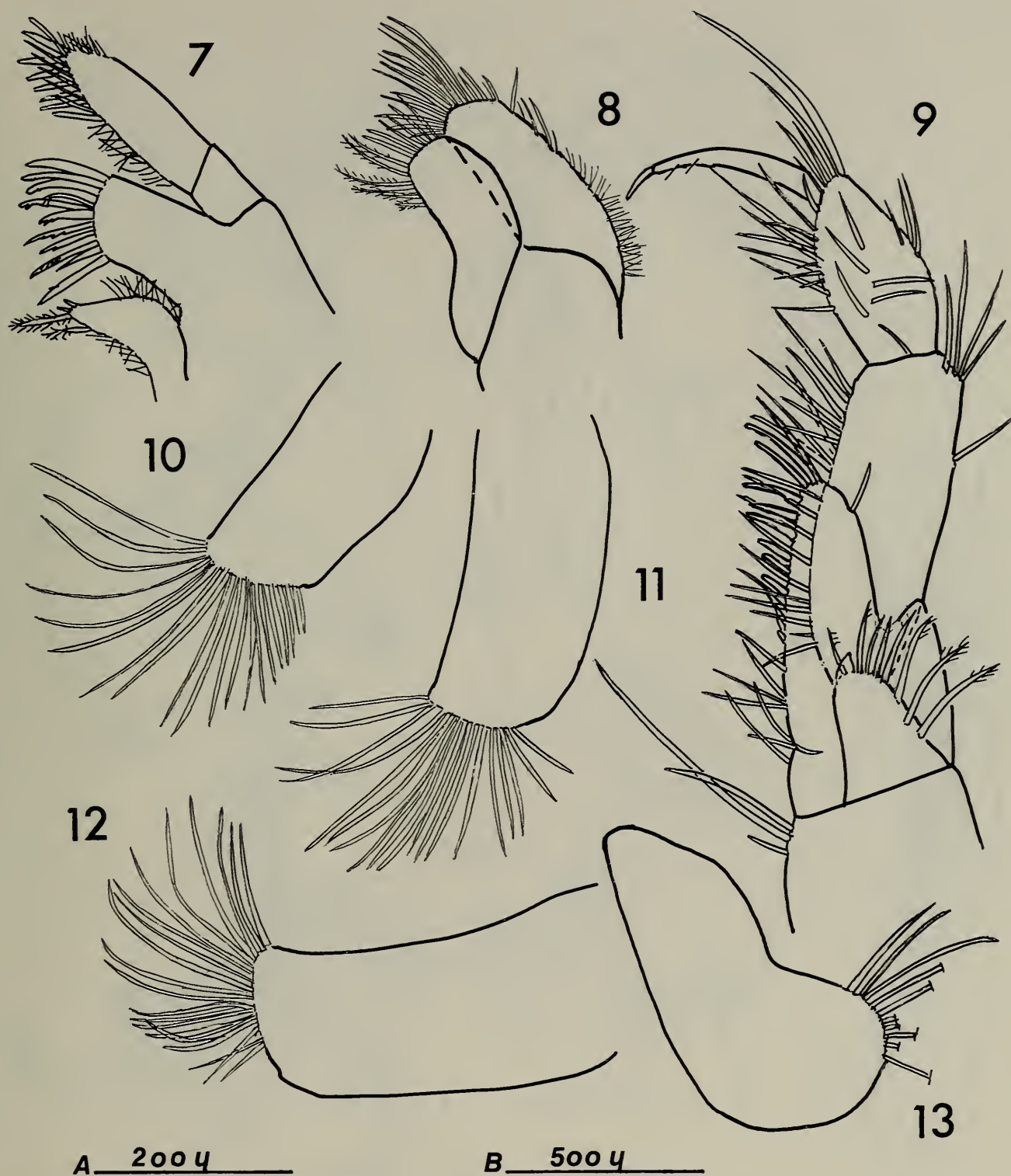
specimens. Antenna 1 (Fig. 1), article 1 of peduncle about 1.5 times as long as wide, about 2.4 times as wide as article 2, ventral margin with 3 plumose setae, dorsal apex weakly produced with 1 small seta; article 2 about 0.8 times as long as article 1, with midventral row of 6 setae and 8 shorter proximal setae, primary flagellum with 12



Figs. 5, 6. *Linca pinita*, new genus, new species: 5, peduncle of antenna 2; 6, flagellum of antenna 2.

articles, about 0.6 times as long as peduncle, articles 2–9 each bearing 1 short aesthetasc; accessory flagellum with 10 articles. Antenna 2 (Figs. 5, 6), article 1 without cone-like process; article 3 with thin anterodorsal spine and 2 small submarginal setae; spine formula of article 4 = 3–3–7, dorsal margin

with 3 notches bearing 6 setae, 6 setae and 1 spine (distal to proximal), ventral margin with about 11 groups of 1–3 long to medium setae, 1 long ventral spine distally; article 5 about 0.7 times as long as article 4, with single facial spine, dorsal margin bearing 1 set of distal

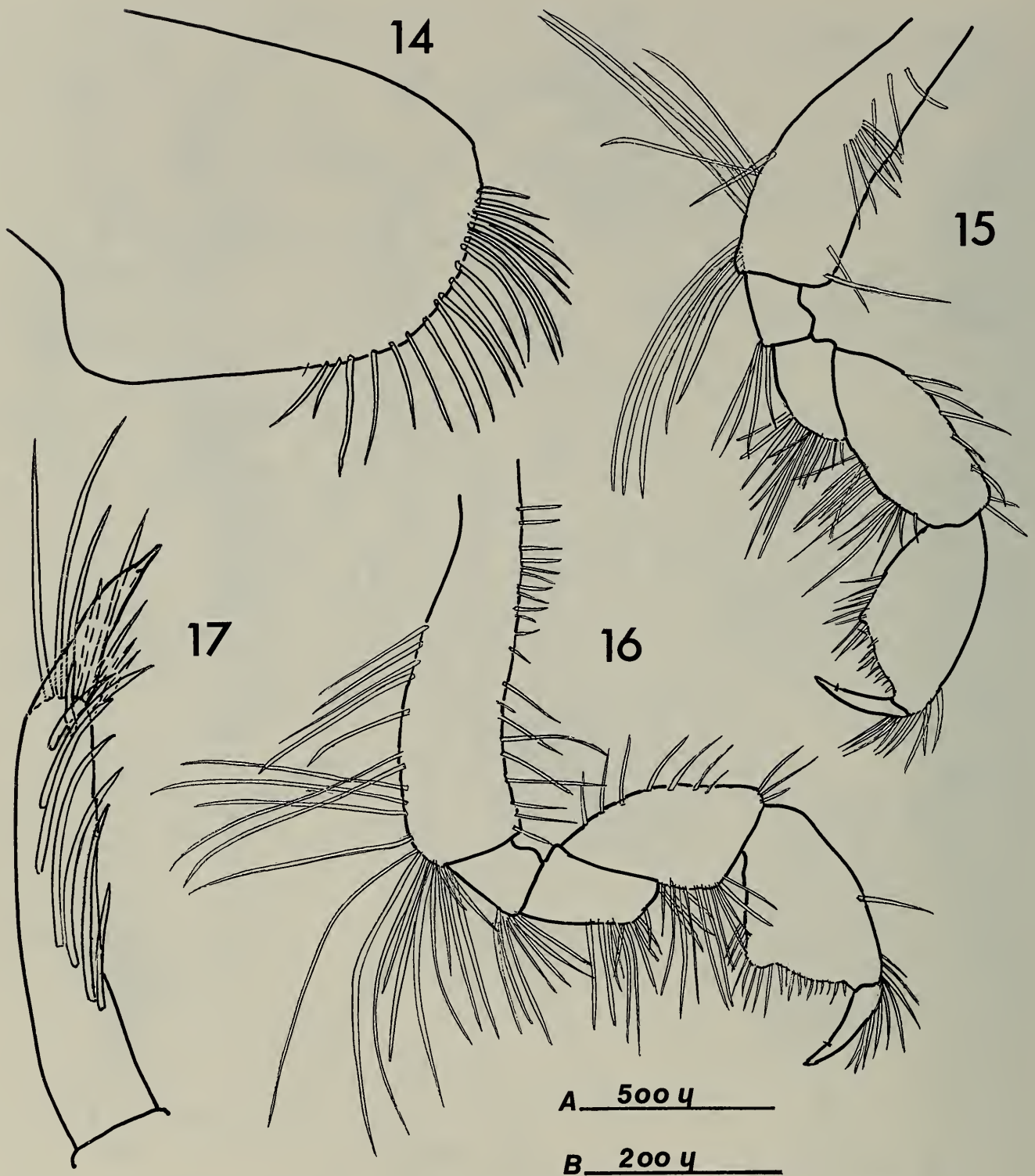


Figs. 7-13. *Linca pinita*, new genus, new species: 7, maxilla 1; 8, maxilla 2; 9, maxilliped; 10-12, coxae 1-3; 13, coxa 5. Scales: A, Figs. 7-9; B, Figs. 10-13.

medium to short setae, ventral margin with 8 sets of 1 long seta each, 3 ventrodiscal long to medium spines set facially; flagellum about 0.8 times as long as articles 4-5 of peduncle combined, with 13 articles.

Mandibles weakly extended near palpar

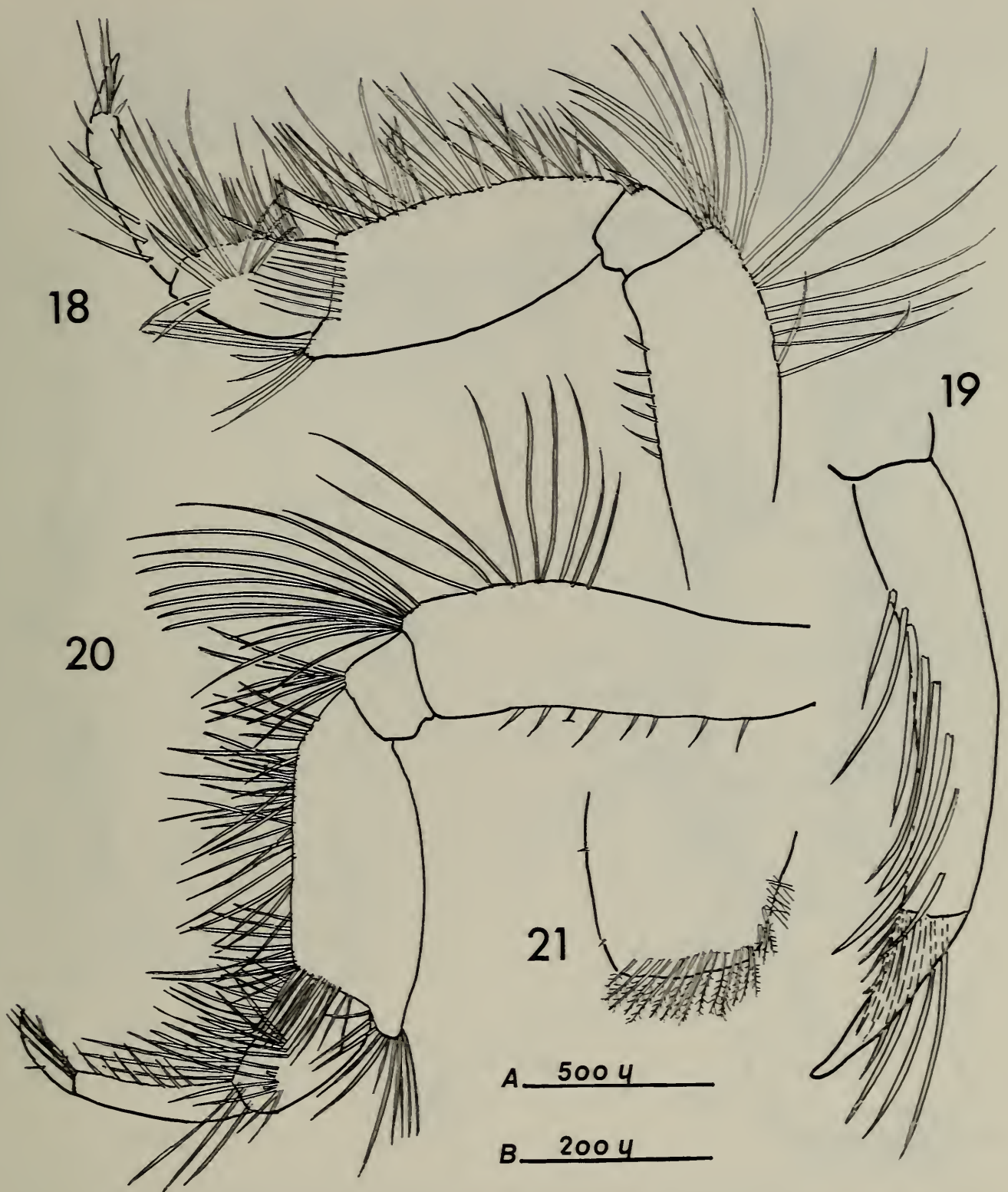
attachment, right incisor with 4 teeth, left incisor composed of two divided branches: one of them with 1 tooth and the other one with 2 teeth; right lacinia mobilis bifid, distal branch shorter than proximal, flabellate, tridentate, proximal branch simple, point-



Figs. 14–17. *Linca pinita*, new genus, new species: 14, coxa 4; 15, 16, gnathopods 1–2; 17, article 6 of pereopod 3. Scales: A, Figs. 14–16; B, Fig. 17.

ed, left lacinia mobilis (Fig. 3) with 4 teeth, middle teeth shortened; right rakers 17 plus 1–2 reduced in size, left rakers 15 plus 1–2 much smaller; molars composed of bulbous protrusions, each with 1 long serrate and 2 short spines, molars without plume but pu-

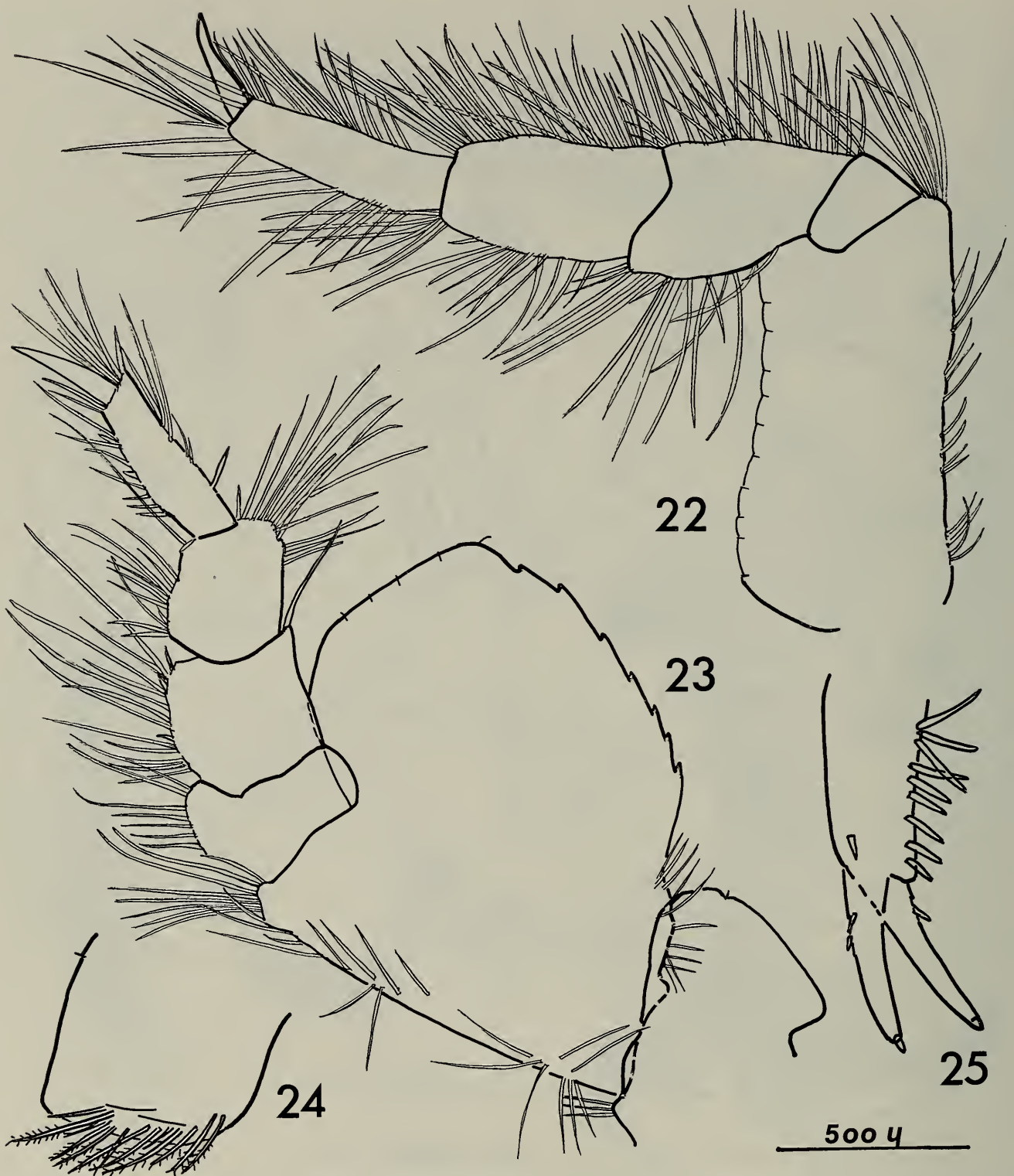
besent (Fig. 2); palp (Fig. 4), article 1 short, article 2 carrying 1 long inner apical seta and 4 other short inner setae, article 3 about 1.2 times as long as article 2, oblique apex with about 10 spine-setae, basofacial formula = 4–2. Maxilla 1 (Fig. 7), inner plate



Figs. 18–21. *Linca pinita*, new genus, new species: 18, pereopod 3; 19, article 6 of pereopod 4; 20, pereopod 4; 21, epimeron 1. Scales: A, Figs. 18, 20, 21; B, Fig. 19.

thin, bearing 1 long apical plumose seta, 1 shorter apical plumose seta medially and 2 much shorter lateral simple setae apically; outer plate with 11 spines; palp article 2 with 7 apical medial marginal spines and 6

submarginal setae. Maxilla 2 (Fig. 8), inner plate shorter than outer, with 4 short medial setae, outer not broader than inner, with 5 apical setae on lateral edge. Maxilliped (Fig. 9), inner plate with 1 large thick apical spine,

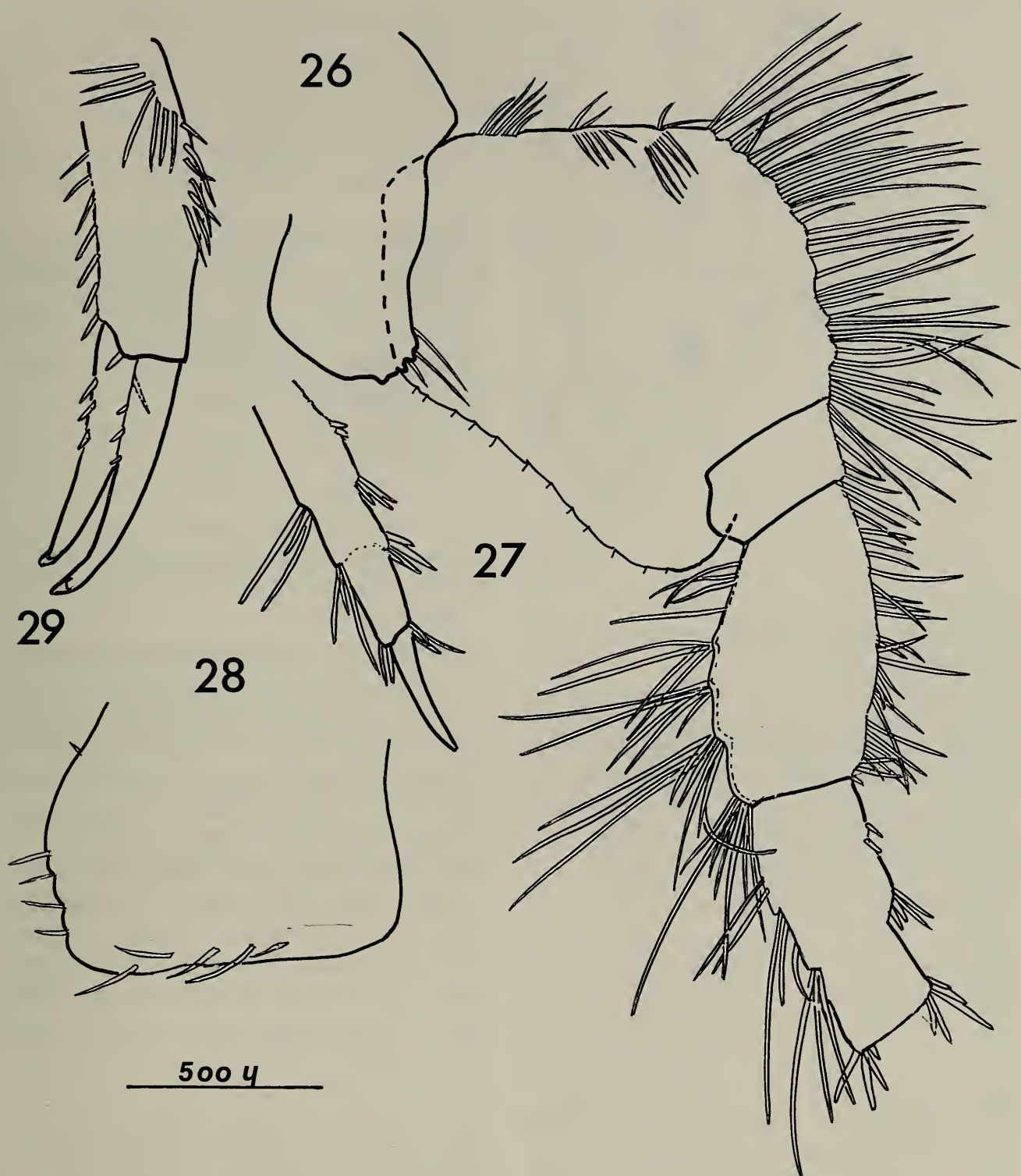


Figs. 22–25. *Linca pinita*, new genus, new species: 22, pereopod 5; 23, pereopod 7; 24, epimeron 2; 25, uropod 2.

4 submarginal setae apically and 4 medial setae; outer plate with 14 medial and apical spines and 1 apical seta on lateral edge; palp article 1 without lateral setae distally, article 2 with 2 groups of 1 and 4 apical setae on lateral edge, medial margin of article 2 mod-

erately setose, article 3 with 6 facial setae, 3 lateral setae, article 4 bearing 2 accessory small setae, with nail medium in length.

Coxa 1 (Fig. 10) not expanded apically, anterior margin almost straight; main ventral setae of coxae 1–4 = 23–19–19–21, pos-

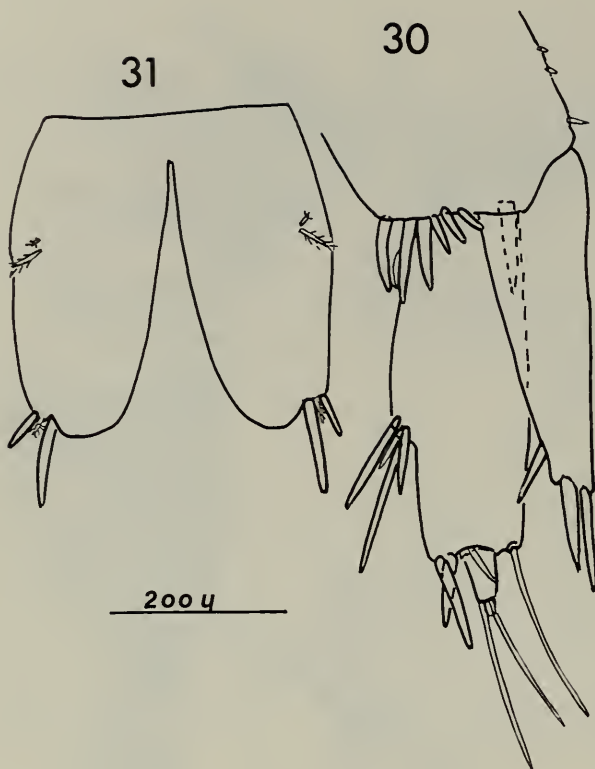


Figs. 26–29. *Linca pinita*, new genus, new species: 26, pereopod 6; 27, article 6 of pereopod 6; 28, epimeron 3; 29, uropod 1.

termost seta of coxa 1 longest, of coxae 2–3 slightly shorter (Figs. 11, 12), of coxa 4 very short; anterior and posterior margins of coxa 4 (Fig. 14) divergent, posterior margin very oblique, posterodorsal corner rounded, posterodorsal margin short, con-

termost seta of coxa 1 longest, of coxae 2–3 slightly shorter (Figs. 11, 12), of coxa 4 very short; anterior and posterior margins of coxa 4 (Fig. 14) divergent, posterior margin very oblique, posterodorsal corner rounded, posterodorsal margin short, con-

cave, width-length ratio of coxa 4 = 149:176. Gnathopods generally ordinary (Figs. 15, 16), gnathopod 2 weakly enlarged, width ratios of articles 5–6 of gnathopods 1–2 = 41:47 and 41:53, length ratios = 90:88 and 78:90; palmar humps ordinary, palms



Figs. 30, 31. *Linca pinita*, new genus, new species: 30, uropod 3; 31, telson.

strongly oblique; article 5 of gnathopod 1 elongate, ovate, posterior margin flat, article 5 of gnathopod 2 elongate, ovate, posterior margin rounded. Pereopods 3–4 (Figs. 17–20) similar, but article 5 of pereopod 4 slightly stouter than that of pereopod 3, submarginal setae formula on article 4 of both pereopods = 9 and 10, parallel to apex, setae formula on article 5 = 9 and 13, longest spine on article 5 extending to apex of article 6, article 5 without proximal spines posteriorly, spine formula of article 6 = 8 plus 8 and 8 plus 10 but without middistal seta, clump of apical spines thin and long; acclivity on inner margin of dactyls of pereopods 3–4 represented by slit in which is inserted a short seta. Coxa 5 (Fig. 13), 6 and 7 posteroventral seta formula = 10–4–1. Pereopods 5–6, articles 4–5 narrow, facial spine rows sparse, facial ridge formula of article 2 on pereopods 5–7 = 0–1–1. Width ratios of articles 2, 4, 5, 6 of pereopod 5 = 82:57:44:27, of pereopod 6 = 159:72:49:27, of pereopod 7 = 184:53:45:23, length ratios of pereopod 5 = 169:80:82:90, of pereopod

6 = 204:116:106:108, of pereopod 7 = 231:67:57:78; article 2 of pereopod 7 reaching apex of article 4, posterior margin with 7 medium serrations, medial apex of article 6 apparently with scarcely comb setae, bearing 6–7 digital processes (Figs. 22, 23, 26, 27).

Epimeron 1 (Fig. 21), posteroventral corner rounded, posterior margin weakly convex, with 2 widely spaced very short setae, anteroventral margin with 10 medium setae, ventral face with about 16 long setae; epimeron 2 (Fig. 24) quadrate, posteroventral corner rounded, posterior margin with 1 small seta, about 14 facial setae in irregular row; epimeron 3 (Fig. 28), posteroventral corner rounded, posterior margin with 4 setae, each inserted in an indentation of the edge, ventral margin with 5 spread setae in posterior half.

Urosomite 1 with lateral seta at base of uropod 1, brush of setae ventral to uropod 1 and brush of midventral setae, articulation line complete, urosomites smooth. Uropod 1 (Fig. 29), peduncle with 7 basofacial setae, ventral cluster of 7 setae, 1 lateral spine distally, 7 marginal spines medially and 1 distal spine on lateral edge; inner and outer rami with 3 dorsal spines. Uropod 2 (Fig. 25), peduncle with about 9–10 dorsal spines, basalmost thin and elongate, 1 medium apical spine medially; outer ramus with 1 dorsal spine, inner with 2 dorso-medial spines. Uropods 1–2, corners of peduncles with fine apical comb-like setae on lateral margin (only seen with high power); rami with articulate but tightly fixed terminal spines. Uropod 3 (Fig. 30), peduncle with 8 ventral spines, dorsally with 1 lateral spine and 1 medial spine and seta; rami of different length, inner extending to M. 87 on article 1 of outer ramus, apex with 2 setae, medial and lateral margin with 0 and 1 seta; article 2 of outer ramus short, 0.12, bearing 2 long setae; 1 apical seta on medial margin of article 1, lateral margin with upward slope, carrying 4 spines, apex with 3 spines laterally. Telson (Fig. 31), length-

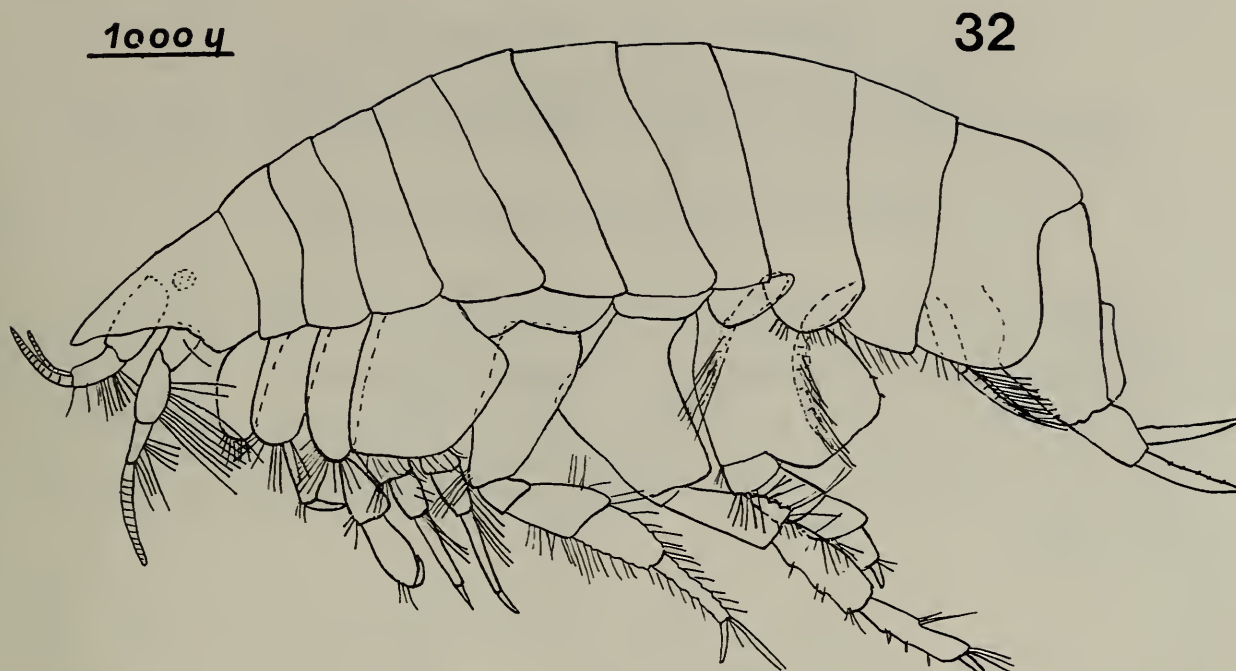


Fig. 32. *Linca pinita*, new genus, new species: lateral view.

width ratio = 60:53, almost fully cleft, each apex of medium width, rounded, lateral lobe broad, shallow, bearing short lateral and long medial spines separated by short plumose seta, midlateral plumose setae different in length, largest of usual size.

Body smooth (Fig. 32), yellow in alcohol.

Holotype. — Museo Argentino de Ciencias Naturales No. 33444, female, 11.87 mm.

Type locality. — Argentine continental shelf, *Shinkai Maru* IV, benthic Sta 92: 50°30'S, 62°31'W, 159 m depth, 14 Aug 1978, donator Dr. R. O. Bastida.

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